PHARMACY BENEFITS MANAGEMENT (PBM)

USER MANUAL

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Department of Veterans Affairs
VistA Health Systems Design & Development

Revision History

Each time this manual is updated, the Title Page lists the new revised date and this page describes the changes. If the Revised Pages column lists "All," replace the existing manual with the reissued manual. If the Revised Pages column lists individual entries (e.g., 25, 32), either update the existing manual with the Change Pages Document or print the entire new manual.

Date	Revised Pages	Patch Number	Description
02/2006	iv, 115-132	PSU*4*3	PBM Extract Enhancements #3 project. Added Section 5. to Table of Contents. Added Section 5. HL7 Messages and 5.1. Data Specifications. Updated Glossary to include definitions of HL7 and HLO, and for page numbering purposes. Updated Index to include items from new section on HL7 Messages, and for page numbering purposes. (R. Singer, P.M., M. Newman, Tech. Writer)
06/2005	All		Original Release of PBM V. 4.0 User Manual (T. Holley, P.M., C. McCollister, Tech. Writer)

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5. HL7 Messages

Recent enhancements allow real-time transmission of all verified Chemistry Laboratory tests via Health Level 7 (HL7) messaging to port 5001 in the Consolidated Mail Outpatient Pharmacy National Server (CMOP-NAT).

HL7 and TCP/IP are the communication protocols that are used to transmit messages between VistA databases and the VistA HL7 Optimized (HLO) process on the CMOP-NAT server.

Two links are required for message transactions:

1. The VMAC sending link sends HL7 messages to Pharmacy Benefits Management (PBM) at the CMOP-NAT server.
2. The PBM HL7 listener link receives the HL7 messages.

No data is transmitted for patients who are employees; otherwise, each VAMC will send all verified Chemistry Lab tests results to PBM, including hematology and urinalysis.

On the CMOP-NAT server, a daily job processes all the HL7 messages received the previous day. The Chemistry Lab test results at each site are stored in a delimited flat file in a predefined Windows directory on the CMOP-NAT server.

Note: The event protocols for the HL7 sending link and the lab results need to be loaded at all facilities. In addition, the listening link must be set up on the CMOP-NAT server for the messaging to function properly.

5.1. Data Specifications

Data element specifications that make up the new HL7 Lab extract are defined in detail in the table below.

DATA ELEMENT	HL7 SEGMENT	SOURCE	FORMAT	FIELD LENGTH (UL)	COMMENTS
Facility	OBX-15	INSTITUTION field (#.01) within the ACCESSION AREA multiple (#60.11) within the LABORATORY TEST file (#60)	Internal number Example: '578'	3	
Patient SSN	PID-19	SOCIAL SECURITY NUMBER field (#.09) of PATIENT file (#2)	Internal format Example: '123456789'	10	
Patient ICN	PID-12	INTEGRATION CONTROL NUMBER field (# 991.01) ICN CHECKSUM field (#991.02) of PATIENT file (#2) (Values in both fields are concatenated with a 'V'.)	Free Text Example: '1010185893V199552'	12	If ICN does not exist send null
Local Laboratory Test Name	OBX-3	NAME field (#.01) of LABORATORY TEST file (#60)	Internal format Example: 'Potassium'	Up to 40 characters	
LOINC Code	OBX-3 .	CODE field (#.01) of LAB LOINC file (#95.3) pointer by LOINC CODE field (#95.3) within the SITE/SPECIMEN multiple (#60.1) within the LABORATORY TEST file (#60)	Internal format Example: '269'	Up to 9 characters	

DATA ELEMENT	HL7 SEGMENT	SOURCE	FORMAT	FIELD LENGTH (UL)	COMMENTS
National Lab test (NLT) Code	OBX-3	ORDERED TEST field (#.35) within the CHEM, HEM, TOX, RIA, SER, etc. multiple (#63.04) within the LAB DATA file (#63)	Internal format	Up to 10 characters	
Site/Specimen	OBX-3	NAME field (#.01) within the TOPOGRAPHY FIELD file (#61) pointer by SITE/SPECIMEN field (#.01) within the SITE/SPECIMEN multiple (#60.01) within the LABORATORY TEST file (#60)	Internal format	Up to 80 characters	
Results	OBX-5	Field is dependant on test.	Internal format Example: '5.0'		Field is dependent on test
Units	OBX-6	UNITS field (#6) within the SITE/SPECIMEN multiple (#60.01)	Internal format Example: 'mg/dl'		
High Range	OBX-7	REFERENCE HIGH field (#2) within the SITE/SPECIMEN multiple (#60.01) within the LABORATORY TEST file (#60)	Internal format Example: "200" or "REACTIVE"	Up to 50 characters	
Low Range	OBX-7	REFERENCE LOW field (#1) within the SITE/SPECIMEN multiple (#60.01) within the LABORATORY TEST file (#60)	Internal format Example: "60" or "NEGATIVE"	Up to 50 characters	
Date/time Specimen Collected	OBR-7	DATE/TIME SPECIMEN TAKEN field (#.01) within the CHEM, HEM, TOX, RIA, SER, etc. multiple (63.04) within the multiple LAB DATA file (#63)	Internal format Example: 2970814.1400	12 characters	

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6. Glossary

Additive

A drug that is added to an IV solution for the purpose of parenteral administration. An additive can be an electrolyte, a vitamin or other nutrient, or an antibiotic, but only electrolyte—or multivitamin-type additives can be entered as IV fluid additives in CPRS.

Admixture

A type of intravenously administered medication comprised of any number of additives (including zero) in one solution. It is given at a specified flow rate; when one bottle or bag is empty, another is hung.

Adverse Reaction

Any condition precipitated by a drug, which requires patient treatment, admission, or transfer; prompts a specialty consultation; or causes injury or death. Every allergy is an adverse reaction, but every adverse reaction is not an allergy.

Allergy

A state of hypersensitivity induced by exposure to a certain agent.

Allergy Type

The type of causative agent, such as FOOD or DRUG.

AMIS Category

Classification of AR/WS drugs for AMIS purposes. There are four AMIS categories:

Category	Description
0	Drug is classified as field 03 or 04, which includes tablets, capsules, multidose vials, etc. It does not include multiple-dose externals, liquids, or antacids.
1	Drug is classified as field 06 or 07, which includes multiple-dose externals, liquids, antacids, otics, opthalmics, and inhalations.
2	Drug is classified as field 17, which includes solutions and administration sets.
3	Drug is classified as field 22, which includes blood and blood products.

AMIS Conversion Number	Reflects the number of doses/units contained in a single quantity dispensed. For example, for a 20cc vial, the quantity dispensed is 1, and the AMIS conversion number is 20.
Area of Use (AOU)	A place where commonly stocked items are stored for use by wards or treatment areas. An AOU may serve one or more wards or clinics, or, as in the case of "cardiac cath lab", no ward.
Automatic Replenishment/ Ward Stock (AR/WS)	A method of drug distribution and inventory management within a hospital. Drug products can be automatically inventoried and delivered to an Area of Use (AOU) or requested on demand.
Average Unit Drug Cost	The total drug cost divided by the total number of units of measurement.
Chemotherapy	Chemotherapy is the treatment or prevention of cancer with chemical agents. The chemotherapy IV type can be administered as a syringe, admixture, or a piggyback. Once the subtype (syringe, piggyback, etc.) is selected, the order entry follows the same procedure as the type that corresponds to the selected subtype (example: piggyback type of chemotherapy follows the same entry procedure as regular piggyback IV).
Conjunction	A term used to build a SIG for a complex medication order. Conjunctions used are 'AND', 'THEN', or 'EXCEPT'.
Controlled Substance	A drug that has been marked for tracking through the Controlled Substances package. It is usually narcotic.
CPRS	Acronym for Computerized Patient Record System.
Credit	This is money due to the VA facility from the prime vendor. When an invoice dollar amount is more than the adjusted dollar amount, Drug Accountability flags it as an outstanding credit. When the facility receives a credit memo, the credit data is entered in Drug Accountability.

DEA Special Handling

The Drug Enforcement Agency special handling code used for drugs to designate if they are over-the-counter, narcotics, bulk compounds, supply items, etc.

Dispense Units per Dose

The number of units (tablets, capsules, etc.) to be dispensed as a dose for an order.

Dispense Units per Order Unit

This is the total number of dispense units contained in one order unit. For example, if you order a case containing 12 bottles with 1,000 tablets in each bottle, the dispense unit per order unit is 12,000 per the following equation:

Dispense Units: TAB
Order Unit: CS

The case contains 12 bottles of 1,000 tablets
12 x 1,000 = 12,000
DISPENSE UNITS PER ORDER UNIT: 12,000

Dispensing Unit

This field is used to indicate the pharmacy dispensing units when converting the unit per issue to the pharmacy dispensing units.

Dosage Ordered

A single dose of medication that the patient will receive for a prescription (outpatient medication) order.

Drug

A substance used to treat illness or disease.

DRUG file (#50)

A VistA file used by Pharmacy software products. This file is used to list generic drug products and holds the information related to each drug that can be used to fill a prescription.

Duration

The length of time a medication should be given. A numeric value is usually entered followed by one of the following:
M = Minutes
H = Hours
D = Days
W = Weeks
L = Months

HL7	Health Level Seven. Application protocol for electronic data exchange in health care environments.
HLO	Optimized version of HL7, designed to provide significantly improved messaging.
Historical	An allergy that has been stated by some source versus one that is actually witnessed by some personnel at the facility.
Hyperalimentation (Hyperal)	Long term feeding of a protein-carbohydrate solution. Electrolytes, fats, trace elements, and vitamins can be added. Since this solution generally provides all necessary nutrients, it is commonly referred to as Total Parenteral Nutrition (TPN). A hyperal is composed of many additives in two or more solutions. When the labels print, they show the individual electrolytes in the hyperal order.
IFCAP	Integrated Funds Distribution Control Point Activity, Accounting and Procurement. A VA software package that tracks procurement and payment.
Infusion Rate	The designated rate of flow of IV fluids into the patient.
Inpatient Site	An area within a facility that treats patients that have been admitted. If the facility has more than one Inpatient dispensing area, it is necessary to link each pharmacy location to the appropriate Inpatient site (area) for the collection of dispensing data.
Invoice	A bill for ordered goods. Each invoice is numbered. See entry for Order Number vs. Item Number.
IV Additive	A drug that is added to an IV solution for the purpose of parenteral administration. An additive can be an electrolyte, a vitamin, or other nutrient; or an antibiotic. Only electrolyte or multivitamin type additives can be entered as IV fluid additives in CPRS.

IV Piggyback (IVPB)	Small volume parenteral solution for intermittent infusion. A piggyback is comprised of any number of additives, including zero, and one solution; the mixture is made in a small bag. The piggyback is given on a schedule (for example, Q6H). Once the medication flows in, the piggyback is removed; another is not hung until the administration schedule calls for it.
IV Solution	Usually a Large Volume Parenteral (LVP), administered as a vehicle for additive(s) or for pharmacological effect of the solution itself. Infusion is generally continuous. An LVP or piggyback has only one solution (primary solution). A hyperal can have one or more solutions.
IV SOLUTIONS file (#52.7)	Contains drugs, which are used as primary solutions in the IV room. The solution must already exist in the DRUG file (#50) to be selected. Data in this file includes drug generic name, print name, status, drug information, synonym(s), volume, and electrolytes.
LVP	Large Volume Parenteral—Admixture. A solution intended for continuous parenteral infusion administered as a vehicle for additive(s) or for the pharmacological effect of the solution itself. Composed of any number of additives, including zero, in one solution. An LVP runs continuously, with another bag hung when one bottle or bag is empty.
Line Item	This is the information on the invoice for an ordered drug.
MailMan	An electronic mail, teleconferencing, and networking system.
Master Vault	An inventory location created to store a select group of controlled substances and track their balance and activity.
Mechanism	In the context of Adverse Reaction Tracking (ART), this is an indicator of whether the data for the patient is just an adverse reaction or an allergy.

Narcotic Area of Use (NAOU)	A place where commonly stocked Controlled Substances drugs are stored for use by pharmacy, wards, or treatment areas. There are three types of NAOUs: 1) Master Vault, 2) Satellite Vault, and 3) Narcotic Locations.
NDC	Acronym for National Drug Code. A field (with various field numbers) that exists in the DRUG file (#50), ITEM MASTER file (#441). With some formatting adjustments the field is used to match entries in otherwise unlinked files and open the door for comparative displays and reports. The code itself contains a maximum of 12 digits. The first six digits are the manufacturer's code, the next four are the product code, and the last two digits are the package code.
Noun	**A** term associated with the dosage form assigned to the drug; used by the Outpatient Pharmacy software to build a SIG for a prescription order.
Observed	An allergy or adverse reaction that has actually been witnessed by some personnel at the facility.
Order	VA's request for goods from the vendor.
Order Number vs. Invoice Number	An order number is a VA number by which to charge the ordered goods. The invoice number is the vendor's number for billing the ordered goods. There can be many invoice numbers assigned to one order number because by law, certain drugs have to be placed on an invoice by itself. Also drugs can come from different distribution centers, which necessitates different invoice numbers.
Origination Date/Time	The date/time the allergy or adverse reaction was entered into the system.
Originator	The person who entered the allergy or adverse reaction into the system.

Outpatient Site	An area within a facility that treats patients that are not admitted to the facility. If a facility has more than one Outpatient dispensing area, it is necessary to link each pharmacy location to the appropriate Outpatient site (area) for the collection of Outpatient dispensing data.
PBM	Acronym for Pharmacy Benefits Management.
Pharmacy Location	An inventory location created to store a select group or all of non-controlled drugs and track their balance and activity.
Piggyback	Small volume parental solution for intermittent infusion. A piggyback is composed of any number of additives, including zero, and one solution; the mixture is made in a small bag. The piggyback is given on a schedule (example: Q6H). Once the medication flows in, the piggyback is removed; another is not hung until the administration schedule calls for it.
Pre-Exchange Units	The number of actual units required for an order until the next cart exchange.
Prescription	This term is now referred to throughout the software as medication orders.
Prime Vendor	A procurement system where each section orders pharmaceutical supplies directly from one primary vendor via computer link.
Print Name	Drug generic name as it is to appear on pertinent IV output, such as labels and reports. Volume is not part of the print name.
Process	Process is matching invoice data with data in VistA and validating the data. Matching is accomplished by comparing the line item data on the invoice with its entry in the DRUG file (#50). Validating is accomplished by confirming the quantity received vs. the quantity invoiced. Anyone holding the PSA ORDERS key can process the invoice.

Provider	The person who authorized an order. Only users identified as providers who are authorized to write medication orders may be selected.
Reactant	The causative agent that caused a patient to have an allergy or adverse reaction.
Record Type	In the context of this document, a code to differentiate a vital from an immunization record.
Refill	A second or subsequent filling authorized by the provider.
Reporting Period	The period for the Start/Stop dates entered by the user for the PBM extract.
Route	How the medication is taken, administered, or used.
Schedule	The frequency by which the doses are to be administered, such as Q8H, BID, NOW, etc.
Severity	An index of how the allergy or adverse reaction affected the patient.
SIG	The Latin term “signa” meaning “label.” SIG refers to instructions printed on the prescription label.
Sign/Symptom	Something that could be subjectively or objectively measured that indicates an allergy or adverse reaction.
Syringe	Type of IV that uses a syringe rather than a bottle or bag. The method of infusion for a syringe-type IV may be continuous or intermittent.
Unit	A standard form of measure.
VA Drug Class Code	A drug classification system used by VA that separates drugs into different categories based upon their characteristics. IV cost reports can be run for VA Drug Class Codes, provided the Outpatient Pharmacy V. 5.6 or later package has been installed at the site.
Verb	A term that helps to describe how the medication will be taken/used.

VA Generic Name	A name given to an item (drug, supply, etc.) in pharmacy files. It is this name which is matched with the entry in the GENERIC NAME field (#.01) of the local DRUG file.
VA Product Name	The unique name assigned to each drug product. This name includes strength, unit, and dosage form.
VistA	Veterans Health Information Systems and Technology Architecture.
Vital Qualifier	Further defines the vital sign; a word that gives a more detailed description of an item.
Vital Type	A category of a vital sign or measurement (for example, pulse, respiration, or blood pressure).

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